that the number of units of nutrient supplied might be the best criterion to apply, but we do not think that the result by this method would be substantially different.

363. We conclude that the conditions to which the Act applies prevail as regards the supply of fertilisers in each of classes (*a*), (*b*), (*c*), (*e*) and (*f*), because of the proportions of total supplies for which I.C.I. is responsible as regards class (*a*), for which Potash Ltd. is responsible as regards class (*b*), for which Fisons is responsible as regards classes (*c*) and (*f*), and for which Fisons and B.B.S. are each responsible as regards class (*e*). In the case of class (*b*), an additional ground for the conclusions is the proportion of total supplies which is supplied to Fisons.

364. In the case of class (*d*) it is difficult to obtain accurate information about the tonnage or value of ground rock phosphate which is supplied for the purposes of our reference. A significant proportion of the ground rock sold is used in making compounds, but such sales, unlike the corresponding sales of fertilisers in classes (*a*), (*b*) and (*c*), are not covered by our reference (see Appendix 1). Many suppliers are unable to distinguish statistically between sales for straight use and sales for compounding. In the light of estimates we were satisfied that Fisons was responsible for more than one-third, both by tonnage and by value, of the total supplies for straight use in 1954–55, and that S.A.I., the next largest supplier, was responsible for less than one-third. In 1956–57 and 1957–58, total sales, for straight use and for compounding, amounted to 38,842 tons (value £455,000 approximately), and 36,102 tons (value £410,000 approximately) respectively. Neither Fisons nor S.A.I. was responsible for as much as one-third of these sales in either year. Since a relatively high proportion of Fisons' sales is for straight use, Fisons' share of total supplies for straight use appears, on the basis of such estimates as we have been able to make, to have been about one-third in 1956–57, but it was significantly less than one-third in 1957–58. S.A.I., on the other hand, sells a relatively high proportion of its ground rock for compounding, and its share of total supplies for straight use may, therefore, be assumed to have been less than one-third in both of these years. Fisons' share of a diminishing total market for ground rock phosphate has clearly been declining in recent years. We do not think it can be inferred that either Fisons or any other supplier was responsible for as much as one-third of the total supplies of this product in 1957–58 or subsequently, and we conclude that the conditions to which the Act applies do not prevail as regards class (*d*).

## CHAPTER 12. OBSERVATIONS OF USERS AND OTHERS

365. It will be apparent from the description of the fertiliser industry given in earlier chapters that consumers of chemical fertilisers include agricultural and horticultural users and, in the case of certain fertilisers in classes (*a*), (*b*) and (*c*), manufacturers who buy these fertilisers as raw materials for their own compounds, and that distributors include agricultural merchants, co-operative societies, contractors and some fertiliser manufacturers. We set out in this chapter some observations and views which we have received from these various classes of user and trader and from the Government Departments concerned with the production and use

of fertilisers. In so far as these views are critical, directly or by implication, of the leading suppliers they have been made known to the companies in question, whose own views are given in Chapter 14. In certain cases we have felt it necessary to draw attention, in footnotes, to evidence which conflicts with the criticism or has a considerable bearing upon it, but it should not be supposed that we endorse the observations which are not so annotated. For the most part, however, the tone of the observations received may be fairly described as neutral. This chapter does not purport to be a complete summary of the evidence received from the persons and organisations indicated, some of which has been used elsewhere in the report. It should be added that most of the evidence set out in this chapter was originally obtained in 1957, though, in the more important cases, it has since been brought up to date.

## I. Agricultural Users

366. Evidence was obtained from the National Farmers' Union (N.F.U.), the National Farmers' Union of Scotland (S.N.F.U.), the Ulster Farmers' Union (U.F.U.), the Farmers and Smallholders Association, about two hundred individual farmers and a number of University Schools or Departments of Agriculture and other Agricultural Colleges and institutions with experimental farms. As we have explained in paragraph 24, the three Farmers' Unions are the principal organisations representing full-time professional farmers in the United Kingdom.

### *The National Farmers' Union*

367. The N.F.U. considers that, generally, the fertiliser needs of its members are adequately met and that the advisory services of the leading suppliers, such as I.C.I. and Fisons, are technically first rate. Some definite shortages of Nitro-Chalk, basic slag and, on occasion, C.C.F., were apparent in 1956 and 1957, and some delays in delivery during the period of peak usage, due to diminished stocks or transport shortage, were noticed, particularly in the case of nitrogenous fertilisers in the spring of 1956. Apart from the higher grades of home-produced basic slag, for which demand exceeds supply, these shortages have been remedied and supplies of all types of fertiliser are now said to be adequate to meet current demands at prevailing prices.

368. The N.F.U. says that granular fertilisers are favoured by farmers and granular concentrated fertilisers are generally the most economical to apply. As regards a choice between straight and compound fertilisers, farmers can mix their own compounds from straight fertilisers but these mixtures are not granular or concentrated and are not likely to store well. A similar result may be achieved by the successive application of straight fertilisers, but this involves extra time and labour. Generally, with the wide range of compound fertilisers now available, only the large farmer who has proper mixing equipment is likely to gain by mixing his own compounds on the farm. The present range of concentrated compounds is thought to be wide enough but "virtually confined to one manufacturer, Fisons". The N.F.U. thinks, however, that the range of the less concentrated compounds available is too wide and has probably served merely to complicate the supply position and confuse the farmer as well as to add to the cost of

production ; on agricultural grounds there does not appear to be sufficient justification for fine differences in analysis.

369. The N.F.U. says that price is a major factor in determining the extent of fertiliser consumption, as was demonstrated when the subsidies were temporarily discontinued a few years ago. There are striking similarities between the prices charged for ammonium sulphate, potash and superphosphate by a number of leading suppliers, as also between the early delivery rebates on ammonium sulphate and compounds, and the extra charges for small lots. In comparing the prices of C.C.F. and a number of Fisons' compounds, the N.F.U. points out that the difference between the price of the compound and the price of the straight fertilisers containing the equivalent amounts of nutrient is least in the case of C.C.F. ; and it records the general view of its members that compounding charges are excessive. The N.F.U. would welcome a fuller disclosure by the producers of their actual costs at various stages of manufacture. The N.F.U. is generally in favour of the prevalent practice by which fertiliser manufacturers in England and Wales quote a national price to include delivery to the farmer's nearest station, as this means that the farmer who is remote from the works is not prejudiced against the use of fertiliser by having to pay a higher price ; in many cases these remote farms are those with the type of soil where the use of fertilisers needs to be encouraged.

370. The N.F.U. considers that the increase in the consumption of fertilisers in the United Kingdom is likely to continue and that there is need for an integrated policy of factory construction to ensure that demand is met. The N.F.U. suggests that when home production is inadequate the import duty should be abolished and that this applies to the case of basic slag. The N.F.U. suggests also that liquid fertilisers, in particular anhydrous ammonia, might be more widely used.

*The National Farmers' Union of Scotland*

371. The S.N.F.U. finds the organisation of the fertiliser industry and the efficiency of the leading suppliers in regard to the requirements of Scottish agriculture to be in general satisfactory. Fertiliser usage could be extended in Scotland generally, and in particular the use of nitrogen and potash could be increased. Price is again said to be a major factor in determining consumption ; shortage of money and a possibly inadequate use of the technical services available combine to restrict fertiliser usage. Generally speaking, there is thought to be little variation in price except in regard to discounts for large purchases. The price relationship between straight and compound fertilisers is considered generally satisfactory.

372. The S.N.F.U. says that mixtures made by the farmer are not considered satisfactory substitutes for ready made compounds and are more costly to produce. It is said that a wider use could be made of concentrated compounds for economy and convenience of application ; the range of these has been considerably increased during the past two years and is now satisfactory for the majority of requirements. The S.N.F.U. points out, however, that there has been, in recent years, an alarming increase in the incidence of deficiency diseases, such as grass tetany, among cattle and sheep. This has been attributed to a lack of trace elements associated with the use of concentrated fertilisers, which contain practically none of the

"impurities" which could help to maintain an adequate reserve of trace elements in the soil. As a result, the S.N.F.U. thinks that there is still an important place for fertilisers such as low grade basic slag which is sometimes scarce in the spring. The S.N.F.U. considers that the widespread use of compound fertilisers such as P.M.P., which contain a high degree of non-soluble elements, should not be encouraged.

373. The S.N.F.U. is conscious of the need for publicity on better farming methods and on the usage of fertilisers and says that the technical advice available is not always utilised by the farmers most in need of it. The Union would welcome an extension of the practice of printing the analysis of fertilisers on the bags, particularly on the part of the small mixers.*

*The Ulster Farmers' Union*

374. The U.F.U. says that there is now little or no shortage of any fertiliser in Northern Ireland. There has been, on occasion in recent years, some scarcity of basic slag, granular single superphosphate and Nitro-Chalk but supplies of these fertilisers are now more than equal to demand. Granulating capacity for compounds has recently been increased and Richardsons Chemical Manure Co. Ltd. has introduced two new concentrated fertilisers and is prepared to consider further additions should the U.F.U. feel they are required, while I.C.I. is now selling Kaynitro and Fisons has increased its supplies and is selling two of its new concentrated compounds. The position in these respects has altered substantially since 1957; the U.F.U. thinks that the recent increased interest of Fisons in Northern Ireland may have contributed to the improved position generally.

375. The U.F.U. says that farmers in Northern Ireland must buy through merchants, some of whom are also compounders. On the whole, the services offered by merchants are satisfactory, and there is some competition within the limits of their margins. Although, in the past, the services offered by producers to merchants were not always regarded as satisfactory and margins thought inadequate, services appear now to have improved and one manufacturer at least has increased the merchant's margin. It is thought that granulating and compounding charges have tended to be high and that, if a farmer has available labour, it pays him to mix his own fertilisers. The great advantage of factory made compounds, however, is that they are available in granular form. The U.F.U. says that prices of compounds—and also of superphosphate—were reduced on 1st July, 1958, and that no increases had been made since 1st July, 1956, although factory costs may have increased. It is suggested that the activities of Fisons may have had an effect in bringing about the decision to reduce prices in 1958.

376. The U.F.U. says that there has been corresponding improvement in the past year or two in advisory services; first rate technical advice is now available from Richardsons Chemical Manure Co. Ltd. and its associate, The Ulster Manure Co. Ltd., and from Fisons and I.C.I. as well as from the Ministry of Agriculture of Northern Ireland. The two first named companies have two field officers, and intend, the U.F.U. understands, to recruit two more. Farmers are said to be appreciative of the assistance

* The requirements of the Fertiliser and Feeding Stuffs Regulations (see paragraph 29) can be met by a mark identifiable in the trader's register.

given by all these companies. It is thought that advice given by these companies is more prompt and up-to-date than that given previously, and farmers are impressed by the wide experience of those now giving advice and by the fact that the advice is " less cautious than that given by, say, the Ministry of Agriculture ".

*The Farmers and Smallholders Association*

377. As we have explained in paragraph 25 this Association is on a very different footing from that of the three representative farmers' Unions; it has a small membership drawn from England, Wales and Scotland and is now interesting itself in farm costs. Evidence has been submitted by the Association and its Committee Chairman. The views expressed are critical of many aspects of the chemical fertiliser industry in the United Kingdom. The witnesses say that prices of fertilisers are too high and that home manufacturers are protected by " penal " import duties on nitrogen and phosphates; that world production of nitrogen is such that, but for the pricing arrangements of the British Sulphate of Ammonia Federation Ltd. (B.S.A.F.) and the tariff, the price of ammonium sulphate would fall; and that the tariff effectively prevents the cheaper Continental product from underselling the B.S.A.F. product. They have submitted figures purporting to compare the United Kingdom and West German internal prices for ammonium sulphate and to show that the United Kingdom price was lower than the West German price in 1951; that while both prices rose during the next five years the United Kingdom price increased more steeply and was higher than the West German in 1956; and that while the West German price fell sharply in 1957 and remained at this lower level up to October, 1958, the United Kingdom price was the same in October, 1958, as in 1956. They also purported to show that the export price of United Kingdom ammonium sulphate at the end of 1958 was approximately 25 per cent. below the home price. The witnesses draw attention to recent statistics produced by Kiel University which, they say, show that the world surplus of nitrogen is likely to continue for several years and that there is no likelihood of a " return " to the situation existing before 1956 when the British home price of ammonium sulphate was lower than the German and other Continental prices. The witnesses also say that when the subsidy on ammonium sulphate was increased from £5 16s. 0d. to £6 15s. 0d. a ton in 1956–57 it appeared that the B.S.A.F. used it " to extort a quite unjustifiable price increase from farmers ".*

378. The witnesses say that on the Continent " calcium ammonium nitrate " (i.e. mixtures of calcium carbonate and ammonium nitrate, similar to Nitro-Chalk and Nitra-Shell) is cheaper per unit of nitrogen than ammonium sulphate while in the United Kingdom Nitro-Chalk is the more expensive form of nitrogen. It was suggested that as the unit cost of nitrogen in Nitra-Shell (when first introduced) was the same as that in Nitro-Chalk there had " probably been collusion and price fixing " between Shell and I.C.I., and also that, as Nitra-Shell bears an import duty of £4 a ton, Nitro-Chalk is over-priced.†

* As regards the United Kingdom price of ammonium sulphate see paragraphs 425–434, 470, 476 and 530.

† See paragraph 433.

379. The witnesses say that prices of potash are substantially higher in the United Kingdom than in other West European countries;* also that Fisons' prices for superphosphate are higher than those in other West European countries and that there is no competition from other United Kingdom producers or, because of the import duty, from importers.†

380. As regards prices for compounds, the Association has issued circulars to its members purporting to compare the 1956 and 1957 prices of compounds made by a number of suppliers with the prices of the straight fertilisers containing the equivalent amount of nutrients. According to the Association's figures the difference amounted to 14·9 per cent. of the selling price in the case of I.C.I.'s C.C.F. as against figures ranging from 23·4 to 30·5 per cent. for certain of Fisons' compounds. The lack of reductions for large orders is also criticised.‡

381. The witnesses commended I.C.I. for the increase in factory efficiency which had led to a reduction in the "mixing charge" on C.C.F. (calculated as described in paragraph 380) but criticised the company for having failed, by 1957, to expand production of C.C.F. further. They said that Fisons employed knowledgeable and qualified advisory staff but that the advisory service, and the company's advertisements, had on occasion recommended excessive and uneconomic fertiliser applications.

*Individual farmers*

382. Information was obtained early in 1957, for the most part in reply to questionnaires, from some one hundred and forty farmers in England and Wales, thirty-eight in Scotland and thirty-four in Northern Ireland. Generally, supplies of fertilisers were found to be adequate, and supply arrangements satisfactory and there were very few criticisms of quality. The fertilisers which were most commonly reported as being scarce, or difficult to obtain, were Nitro-Chalk, C.C.F., ammonium sulphate and the higher grades of home-produced basic slag. (It appears from such later inquiries as we have made that these shortages, except in the case of basic slag, have since been remedied. Cf. paragraph 367.)

383. There was a general preference for granulated fertilisers, owing to their better keeping qualities and the fact that they can be drilled and, if broadcast, do not blow away in a high wind. Compound fertilisers appear to be generally popular, and it seems to be exceptional for straight fertilisers to be mixed on the farm before application; successive applications of straights or of compounds and straights are fairly common. The reasons given against mixing are that there is no labour for it, or that the result is unsatisfactory. Those who make their own mixtures do so for the sake of economy, or to secure requirements not met by compounds or to replace compounds which are scarce. C.C.F. has generally been the most popular compound and is regarded as having been cheaper per unit of nutrient content than any other. One farmer has said that his crops require drilling with phosphate and some potash and therefore a granulated compound that can be used in a combine drill is required. He expressed the view in 1957 that

* See paragraphs 608 and 613.
† See paragraphs 574 to 579.
‡ See paragraphs 465 and 466 regarding comparative prices of compounds.

C.C.F. was the only compound which, having regard to the cost per unit and the cost of mixing, could be applied at a total cost comparable with the use of straights. Supplies were then insufficient and his policy was accordingly to use the maximum amount of C.C.F. and the minimum of other compounds and to make up requirements with straights. He has the impression, however, that in the last two years the difference in value between the compounds made by various manufacturers has tended to narrow, though C.C.F. is still the cheapest vis-à-vis the price of straights. He is now able to get as much C.C.F. as he requires and is consequently using smaller quantities of compounds made by other manufacturers, the quantities bought being used for those crops and land which require application by drill but for which C.C.F. is not suitable.

384. A number of farmers have said that compounds are too high in price and that mixing charges are excessive. A number of others have said, in varied phrase, that all fertiliser prices are too high, have risen too much since the war, or have increased disproportionately to the prices of grain and livestock. Others have suggested that the price goes up as the subsidy increases, and that the subsidy goes into the manufacturers' pockets. There was some comment on the money spent by manufacturers on advertising, which, it is said, should be used to reduce prices. Fisons was mentioned by two farmers in this context, and another said that Fisons' profits were excessive. A number of farmers remarked that prices appeared to be maintained, and that there was no price competition, and some suggested that this pointed to collusion or to the industry being in too few hands.*

385. On trading terms, one farmer said that the early delivery rebates were inadequate in relation to the money laid out, and others have pointed out that they may be offset by credit charges if cash is not available on delivery. Another said that July and August, when the rebates are highest, were not the most suitable months from the point of view of labour in which to handle fertilisers. The lack of reductions for large orders, the size of the collection allowances, and the scale of the extra charges on small lots were also criticised by a few farmers and one farmer suggested that selling through merchants must increase prices generally. One farmer said that it is possible to get some price reduction for large orders from the merchant, and suggested that collection allowances should be based on railway or road haulage rates.

*Universities and Colleges*

386. Information was obtained, principally in 1957, from Agricultural Departments or Schools of Universities and Agricultural Colleges in England and Scotland, numbering twelve in all. As in the case of other witnesses certain shortages of Nitro-Chalk, C.C.F. and home-produced basic slag were reported at that time.

387. As regards the range of compounds available the School of one English University suggested that it was unnecessarily large in view of the inexactitude of knowledge of soil and plant needs and that three basic compounds (containing N, P and K in the proportions 2 : 1 : 2, 1 : 1 : 1, and 2 : 1 : 1) would suffice; another said that the number of compounds

* See Chapter 13 generally on the level of prices.

appeared to be confusing. An Agricultural College suggested that the range of concentrated compounds was adequate for most purposes, but that there might be some scope for reduction in the range if this could be accompanied by a reduction in price. The Agricultural Chemistry Department of an English University suggested that there were too many compounds based on triple superphosphate and not enough on ammonium phosphate, and that if the large manufacturers produced a limited range of concentrated granular fertilisers, containing N P K, N P and N K in reasonable proportions, local merchants or farmers could prepare mixtures for particular crops or soils. At least one manufacturer has, it was said in 1958, confused the whole issue by marketing a separate range of inorganic fertilisers for horticultural purposes; the relatively low nutrient content of certain of these fertilisers suggests considerable dilution with fillers and their price appears excessive compared with that of the corresponding quantity of soluble nutrients in the form of straight fertilisers.

388. Of the Scottish Colleges and Universities one has said that there is a great need for fertilisers of much higher concentration (in which respect this country is said to be far behind the United States) but that the multiplication of compounds with minor differences is unnecessary, unscientific and retrogressive in so far as it increases prices and/or reduces margins available to manufacturers for research and technical advance; for all practical purposes a more limited range of compounds supplemented by straights would be adequate. Another College has said that it is doubtful if a wide range of formulation is necessary and that it is certainly not desirable, and the head of one of the Scottish institutions has recommended the adoption throughout Great Britain of the Scottish practice of consultation between the Colleges, the farmers and the trade, with gentlemen's agreements to keep the numbers of compounds within reasonable limits. Another Scottish College suggested in 1957 that, in the case of concentrated compounds, a wider range was desirable because of the resulting economy in cost of transport, storage and application. Since then, the witness says, the range has been widened in Scotland.

389. There is general agreement among these institutions as to the advantages of granulation and the economy in consumption effected by combine and placement drilling. A number of them have pointed out that mixtures made on the farm are not granulated and may be unsatisfactory in other respects and that it is not always possible to organise farm labour for mixing, but the School of one English University has suggested that there is no reason why a well-informed farmer should not get as good results from home mixtures as from compounds. The difference between the prices of compounds and of the equivalent straight fertiliser was noted; some considered the extra charge was worth paying but one English College considered that compounding charges were excessive. The Department of Agriculture of one English University has reported a change, made since 1956–57, to a greater use of straight fertilisers on its farm, particularly on grass and root crops. It is found that the use of gas liquor, which happens to be available locally for application by contract, and separate applications by a spinner type of distributor of phosphate and potash fertilisers, have effected a considerable economy and get over the problem of mixing before application. Compound fertilisers are still used at the farm for cereals and other crops

when placement methods are more economical because of the smaller quantity of fertiliser required.

390. A number of institutions referred to the excellent technical service, assistance and co-operation which they had received from I.C.I., S.A.I. and Fisons.

## II. Distributors of Fertilisers

*The National Association of Corn and Agricultural Merchants Ltd.*

391. As we have said in paragraph 103 the majority of the agricultural merchants in the United Kingdom belong to N.A.C.A.M. The Association expressed the opinion in 1957 that, in general, chemical fertilisers were available in the form demanded by farmers but that temporary shortages sometimes occurred during peak periods of demand. Merchants stocked up to the best of their ability during the year, but it was sometimes physically impossible to supply every requirement at the short notice given by some farmers. During the 1958–59 season, says the Association, no shortage has been apparent, possibly because the sowing season has been so extended.

392. The Association has told us that, though the margins allowed by the fertiliser manufacturers to merchants have increased over the last ten years, the changes have not been substantial. Generally, members feel that the present margins are barely reasonable, having regard to increased costs.

393. The Association considers that the chemical fertiliser manufacturing industry is in very capable, progressive and efficient hands and that the technical advice supplied to both merchants and farmers is of a very high standard. They say that their members appear to be satisfied with the present system of manufacturing and distributing fertilisers and feel that it meets the needs and demands of agriculture. It is said that competition amongst merchants is very keen and this ensures that farmers obtain their chemical fertilisers " on an economic basis ".

*Individual merchants*

394. Replies to questionnaires were received in 1957 from seventy-five agricultural merchants. Of those approached about half dealt in all classes of fertilisers within the reference, all of them handled more than one class and many dealt in several. Most merchants appeared to be satisfied with the supply position and informed us that fertilisers were readily available in the United Kingdom in the form wanted by the farmers. Most replies indicated that there were no fertilisers which were definitely scarce or subject to variations or uncertainties in supply sufficient to affect their use seriously. A number, however, mentioned shortages of C.C.F. and Nitro-Chalk but some of these said that the position was improving. A few references were also made to shortages of basic slag and other fertilisers.

395. The evidence indicated that the prices charged by the different producers for their fertilisers were similar, although not necessarily identical. One merchant said that at one time he had been able to buy ammonium sulphate direct from gas works at varying prices, but now he had to buy through I.C.I. at a fixed price. It was said that on the basis of plant

nutrient content I.C.I.'s C.C.F. was the cheapest compound. In most of the replies it was said that the prices at which the merchants sold were fixed or recommended by the producers and were, therefore, generally the same as those charged by other merchants, though there was no consultation between merchants on the subject. Only a few merchants said that they fixed their selling prices themselves. The general view among the merchants was that the margins allowed to them by the producers were too small, that there had been only minor changes in them during the previous ten years and that they had not kept pace with rising costs. One company (which had merchanting, compounding and contracting interests) said that the margin did not permit the merchant to expand and offer proper services. One merchant said that the collection allowances did not allow merchants situated more than 30 miles from the works to buy economically. A merchant in Northern Ireland said that the early delivery rebates were not sufficient to cover interest and storage charges.

396. Two merchants complained that Fisons had refused to supply them with fertilisers, in one case, in 1958, on the ground that the area was already well covered, in the other, in 1956, that one of the fertilisers asked for (basic slag) was scarce and that it would upset other merchant customers to take on another distributor. One merchant found himself unable in 1958 to buy Continental basic slag because of the arrangement between Fisons and the overseas suppliers (see paragraph 323).

397. The organisation and efficiency of the chemical fertiliser industry and the quality of the advice given by the producers and importers received high praise from merchants generally. One opinion was that I.C.I. had helped to increase United Kingdom production of fertilisers to a greater extent than any government organisation.

*Agricultural co-operative societies*

398. Replies to questionnaires were received in 1957 from some thirty societies, including the Co-operative Wholesale Society Ltd. (C.W.S.) and the Scottish Co-operative Wholesale Society Ltd. A few of these manufactured compounds, and some owned farms, but for the most part their interest in fertilisers lay in their role as distributors. Some societies bought fertilisers direct from producers or importers and a number bought through the C.W.S.; most of them also purchased small quantities from merchants. Their general view was that they obtained the same prices and terms from their suppliers as did agricultural merchants, and that their own selling prices were comparable with those commonly charged by merchants.

399. The supply position was said to be generally satisfactory except for home-produced high-grade basic slag, C.C.F. and Nitro-Chalk; shortages of these had been experienced in the past. The position now appears to be satisfactory in the case of the last two fertilisers. The allocation system adopted by I.C.I. at times when demand for C.C.F. or Nitro-Chalk exceeded supply attracted some criticism as showing little variation and not taking into account societies' expanding requirements. C.C.F. appeared to be generally popular.

400. One society said that the level of prices made fertilisers too expensive to be used by farmers as widely as was desirable. The society has said

that this is not intended as a criticism of the manufacturers and that the Government subsidy would appear to be an acknowledgement of the fact that fertilisers are too costly. Comments from other societies suggested that there was a greater degree of price competition in Scotland than in England. One society suggested that it would be preferable if ammonium sulphate were not handled by the B.S.A.F. and that each producing works should be able to sell its own products direct to the trade.

401. It was suggested by other societies that manufacturers should hold buffer stocks of fertilisers in areas not adequately served, and that merchants should be given a large enough incentive to enable them to hold stocks until the goods were required by their customers. Early delivery rebates received some criticism as not offering sufficient inducement to the merchant in view of the outlay to provide storage and of the deterioration of goods and containers. It was also suggested that there was scope for more standardisation in compounds and that it would be beneficial if growers could be advised of the precise ingredients of compounds or alternatively that manufacturers should show plant food percentages separately when derived from organic sources.

*Contractors*

402. We have received evidence from the National Association of Agricultural Contractors, which, as we have explained in paragraph 103, includes in its membership of two thousand about three hundred concerns which undertake the application of fertilisers. It says that contractors are not normally in the merchanting business and have to pay the full retail price for fertilisers or receive only a small discount. The Association feels that the contractor's services for spreading fertilisers are of value to farmers and says that the only factor limiting this activity is the contractor's inability to obtain supplies at merchant's terms.

## III. COMPOUNDERS

403. Fisons, the largest producer of compounds, has for many years considered the allowance given by the B.S.A.F. on sales of ammonium sulphate for mixing to be inadequate. Fisons argues that I.C.I. and the other producers of ammonium sulphate find their principal market among manufacturers of compounds. This, it is said, relieves the producers of sulphate of many of the expenses which they would incur if they attempted to sell their product as straight fertiliser or in their own compounds, but there is no recognition of this in the differential between price to farmer and price to mixer embodied in the B.S.A.F.'s price structure. Fisons argues that the allowance should be sufficient to enable the mixer to earn a profit on the sulphate he includes in his compounds. As the largest buyer Fisons also considers that it should get better terms than other mixers. As it is, Fisons says, the allowance does not even cover the proper cost of distribution. This dissatisfaction with the B.S.A.F.'s terms is one of the reasons why Fisons has recently expanded its interest in nitrogen (see paragraphs 186–187 and 209–212). Fisons also says that the reason why it adheres to the " bogey " method of pricing its compounds (see paragraphs 457–460) is to minimise the disparity which would otherwise be apparent between the

price of compounds containing ammonium sulphate and that of the straight fertilisers containing the equivalent amount of nutrients (see paragraph 579).

404. Evidence from some ninety other compounders was received in reply to questionnaires, mostly in 1957. The majority of these made no comments of a general nature. A few referred to a shortage of ammonium sulphate in the spring of 1956, and one compounder commented on the difficulty sometimes experienced in obtaining supplies for resale. Some five compounders referred to I.C.I.'s former condition of sale (discontinued in 1957–58) which provided that ammonium sulphate or compounds containing it should not be exported, and one stated that this restriction had had the effect of obstructing the development of an export trade in compounds which contained ammonium sulphate.

405. The view was expressed that it would be preferable if the agency for the B.S.A.F. were not held by I.C.I. which is itself a producer of ammonium sulphate. It was suggested that the agency should be held by some independent body, i.e. a concern not already interested in the production and supply of sulphate; so long as I.C.I. had control of the sale of ammonium sulphate it was difficult to see how the normal advantages in trading produced by competition could arise. One compounder suggested that the price was high for a by-product. Another compounder said in 1958 that the tariff on ammonium sulphate effectively kept out compounds; that this fertiliser is the key to competition in compounds since it commonly accounts for half the cost; and that if the smaller compounders could get it more cheaply they could increase their trade, particularly with local customers.

406. Some of the compounders referred to the conditions governing purchases of potash from Potash Ltd. The majority stated that as from the 1957–58 season the terms covering such purchases were definite and known, but a few said that in former years rebates were not disclosed until the end of the season and were dependent on total requirements of potash being obtained from Potash Ltd. Two witnesses said that the change had been brought about by the advent of competition.

407. One manufacturer of compounds reported occasional past difficulculties in obtaining single superphosphate and said he had had to import in January, 1957. Another reported past difficulty in obtaining triple superphosphate and said that this had curtailed the manufacture of high analysis compounds. Two compounders said that ammonium phosphate was not available from United Kingdom sources and one said that the whole supply was used by I.C.I. in its own compounds.

### IV. Importers of Potash

408. Comments were received in 1957 from two importers of potash from East Germany and the U.S.S.R. One of these believed that Potash Ltd. did not bind itself to allow deferred quantity rebates but used its discretion, depending to some extent on whether the customer placed any of his busines with other suppliers. The other said that an element of fidelity in the rebate operated to the disadvantage of competitors of Potash Ltd. and that the precise amount of rebate was not disclosed to the customer until the end of the season.

409. These two importers also commented upon the arrangement whereby customers have to declare to Potash Ltd. by a given date the tonnages of muriate of potash, 60 per cent. $K_2O$, in bulk, required for the whole season if they are to be eligible for the rebate on such potash. One of these witnesses thought the implication was that otherwise supplies could not be guaranteed and that this tended to make the customer enter into a contract for his total requirements; if he did not do so and the supplies from alternative sources failed the customer could not, according to this view, then expect very sympathetic consideration from Potash Ltd. The importer considered that the force of these considerations was increased by the fact that supplies from three West European countries were handled by Potash Ltd. The other importer also deplored the arrangement and stated that most customers resented it.

## V. Government Departments

*The Board of Trade*

410. The Board have told us that they keep in touch with the industry with a view to ensuring that adequate supplies of fertilisers are available for home agriculture and that export trade is maintained and developed as far as possible. They do not plan the production or supply of fertilisers but are concerned to see that supplies of raw materials and finished fertilisers sufficient to meet consumers' needs are likely to be available. On the supply position, the Board consider that, in general, supplies are adequate for home requirements. At times, however, since decontrol the supply of nitrogenous fertilisers has not been sufficient to provide for all home demands together with all feasible export trade.

411. The Board have received few complaints on fertiliser distribution and these were usually related to the difficulty in concentrating delivery into a short season. The Board have no views as to whether a national delivered price system is justified or not; it seems to suit a number of parties (viz. the farmers, the fertiliser industry and the Agricultural Departments) and they have had no complaints about it. At the end of control they asked the industry to give as long notice as possible of any change as the Agricultural Departments would have to review the effect on their system of subsidies.

412. The Board say that the leading producers are fully co-operative in meeting the requirements of the Board. Suppliers such as I.C.I. and Fisons make considerable efforts in research and technical development, not only in production but also in the application of fertilisers.

*The Agricultural Departments*

413. *The Ministry of Agriculture, Fisheries and Food* and the *Department of Agriculture for Scotland* have said in their evidence to us that they are not directly concerned with the organisation of the fertiliser industry and that their main concern is to see that farms should be able to get all the fertilisers they require and to encourage their use. In England and Wales generally sufficient fertilisers are used on the larger farms but more could be used elsewhere. It is estimated that in Scotland an increase in use of 25 per cent. in each of the plant foods might be desirable, and that the deficiency is fairly general though more pronounced in upland areas.

Generally, therefore, the level of application over the country as a whole is still well below the optimum.

414. The Departments consider that more straight fertilisers would be used by farmers if they were available in granular form and that these should continue to be available, notwithstanding the growing use of compounds. In their view there is no evidence to suggest that the effect on crop growth of a compound fertiliser is different from that of a properly made farm mixture but they point out that the advantages of compounds are that they are generally granulated, store better than powders and save labour on the farm. In some European countries it is considered that the production of compound fertilisers is justified only if the price of the units of nutrient in a compound is the same as, or less than, the price of the equivalent units in straight fertilisers, but in this country it seems to be accepted that compounds should cost somewhat more than the equivalent straights.

415. The Departments see no objection to the increasing volume of production of the more concentrated inorganic compound fertilisers as long as they provide plant nutrients at prices which are not greater, or are less, than the prices of nutrients in ordinary compounds. As regards the range of compounds generally, there has been a considerable increase in the number available in England and Wales since the war, and it has been felt that some farmers might be confused by the variety and require guidance on the use and purpose of the various types of compounds. A scheme for a classification by N, $P_2O_5$ and $K_2O$ ratios has now been devised for England and Wales and will be put into operation shortly. In Scotland, where there have been regional consultations in the three College areas with a view to agreeing on a limited range to meet regional needs, there has been no evidence of any excessive increase in the range of compounds produced. In some cases, however, the differences in the compounds used in the various regions were so slight as to be of no real significance. In 1957 it was, therefore, agreed by the Colleges that a smaller number of specified plant food ratios would suffice to meet the crop requirements over Scotland as a whole. These received general approval at meetings with the manufacturers and are apparently meeting the needs of all concerned as no subsequent alterations have been proposed or found necessary.

416. The Ministry of Agriculture, Fisheries and Food have explained that the national delivered price (to nearest railway station) which is common in England and Wales simplifies the administration of the subsidy by enabling standard flat rates to be paid. If fertiliser prices varied considerably from one area to another payment at standard rates would not be practicable; in the lower priced areas the standard payment might amount to more than 50 per cent. of the cost to the farmer and have to be cut in accordance with the statutory requirements (see paragraph 33), thereby withholding part of the production grant decided upon at the price review. Such cases apart, it is also thought that farmers would dislike a scheme under which the proportionate value of the subsidy differed from one area to another. The Ministry have also suggested that generally anything that diminishes geographical disadvantages reduces the likelihood of demands for special treatment on geographical grounds. The Ministry, accordingly, though without very strong views on the subject, prefer the retention of the status quo.

417. In Scotland, where a mixed system of ex works prices for compounds (other than C.C.F.'s) and delivered prices for other fertilisers generally prevails, the Department of Agriculture also prefer the retention of the status quo. It is not thought, however, that a change from ex works to delivered prices would lead to a request for revision of the subsidy. Such a levelling would not necessarily affect the overall outlay by farmers; a small number in remote areas would derive benefit at relatively small expense individually to the larger number in the rest of the country.

418. As regards the absence of a subsidy on potash in Great Britain, the Agricultural Departments have drawn our attention to the following statement by the Minister of Agriculture, Fisheries and Food during the Debate on the 1957 Fertilisers (United Kingdom) Scheme on 6th June, 1957:—"The reason for the continued exclusion of potash from the subsidy arrangements is that all our potash is imported and a very big proportion of it is from one cartel . . . At present, it would be very difficult to give a subsidy on potash fertilisers since we have little assurance that the effect would not be an immediate or subsequent increase in the price of imported potash".

419. The Departments say that fertiliser manufacturers co-operated willingly to ensure the maintenance of adequate supplies of fertiliser. They find the attitude of the leading producers helpful and consider them to be progressive in matters of research and technique relating to their production.

420. *The Ministry of Agriculture for Northern Ireland* have told us that since 1951, when the supply of fertilisers reverted to private enterprise, they have kept a very careful watch on the supply position. They have found the dozen manufacturers and importers concerned most co-operative in all matters relating to fertiliser production and supplies. As a consequence of this close co-operation with the Ministry no difficulties have been experienced by farmers in Northern Ireland in obtaining the fertilisers they require.

421. The Ministry take the view that the charge for compounding is high. However, since 1956, there has been a very substantial increase in the use of granulated fertilisers, met for the most part from local production; in view of their popularity it is unlikely that farmers would be interested or concerned in mixing powdered fertilisers at their farms, though the cost of straights is less than that of the equivalent compounds.

422. They consider that I.C.I., Potash Ltd. and the two local leading manufacturers, who between them supply at least 90 per cent. of fertiliser needs in Northern Ireland, are very progressive in matters of research and technique and the service given by the remainder is, on the whole, satisfactory. Since 1956 Fisons' trade in granular compounds has been steadily increasing.

## CHAPTER 13. PRICES, COSTS AND PROFITS

423. We have described in Part III the general arrangements of the manufacturers, importers and other principal suppliers for the supply of the various kinds of chemical fertilisers and the terms allowed to different classes of buyers. In this chapter we are concerned with the methods by which prices are determined, with the relation between prices and costs,